

**IN THE CLAIMS:**

Please amend claims 1, 21, 61-63, 73, and 74, and please add claim 77.

This listing of claims will replace all prior versions, and listings of the claims in the application.

**Listing of the claims**

1. **(Currently amended)** An isolated nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of:  
  
a nucleic acid sequence that encodes a fusion protein that consists of a non-IgE protein sequences linked to [[a]] an IgE signal peptide that is from the same species as the non-IgE protein; and  
  
a nucleic acid sequence that encodes a fusion protein that consists of a non-IgE protein sequences linked to [[a]] an IgE signal peptide, wherein the non-IgE protein is an immunomodulating protein selected from the group consisting of cytokines, chemokines, cellular death receptors, cellular adhesion molecules, cellular growth factors, cellular growth factor receptors, protein kinases and enzymes or functional fragment thereof.
- 2-13. **(Canceled)**
14. **(Previously presented)** The isolated nucleic acid molecule of claim 1 wherein said isolated nucleic acid molecule is a plasmid.
15. **(Previously presented)** The nucleic acid molecule of claim 1 incorporated into a viral vector.
16. **(Previously presented)** A composition comprising a nucleic acid molecule of claim 1 and a nucleic acid molecule that comprises a nucleic acid sequence that encodes an immunogen.

17. **(Previously presented)** The composition of claim 16 wherein said composition comprises a nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.

18. **(Canceled)**

19. **(Previously presented)** The composition of claim 17 wherein said immunogen is a pathogen antigen is from a pathogen selected from the group consisting of HIV, HSV, HCV, and WNV.

20. **(Canceled)**

21. **(Currently amended)** An injectable pharmaceutical composition comprising the nucleic acid ~~molecules~~ molecule of claim 1.

22. **(Currently amended)** ~~[[An]]~~ A recombinant vaccine comprising the nucleic acid ~~molecules~~ molecule of claim 1.

23. **(Currently amended)** The recombinant vaccine of claims 22 wherein said recombinant vaccine ~~[[is]]~~ comprises a recombinant vaccinia vector ~~vaccine~~.

24-37. **(Canceled)**

38. **(Previously presented)** The isolated nucleic acid molecule of claim 1 wherein said isolated nucleic acid molecule comprises a nucleic acid sequence that encodes a fusion protein

that consists of an IgE signal peptide linked to non-IgE protein sequences wherein the non-IgE protein is an enzyme or functional fragment thereof.

**39-53. (Canceled)**

**54. (Previously presented)** An injectable pharmaceutical composition comprising the composition of claim 16.

**55. (Currently amended)** The isolated nucleic acid molecule of claim 1 comprising a nucleic acid sequence that encodes a fusion protein that consists of a non-IgE protein sequences linked to [[a]] an IgE signal peptide that is from the same species as the non-IgE protein.

**56. (Previously presented)** The isolated nucleic acid molecule of claim 55 wherein said isolated nucleic acid molecule is a plasmid.

**57. (Previously presented)** The nucleic acid molecule of claim 55 incorporated into a viral vector.

**58. (Previously presented)** A composition comprising a nucleic acid molecule of claim 55 and a nucleic acid molecule that comprises a nucleic acid sequence that encodes an immunogen.

**59. (Previously presented)** The composition of claim 58 wherein said composition comprises a nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.

60. **(Previously presented)** The composition of claim 59 wherein said immunogen is a pathogen antigen is from a pathogen selected from the group consisting of HIV, HSV, HCV, and WNV.
61. **(Currently amended)** An injectable pharmaceutical composition comprising the nucleic acid ~~molecules~~ molecule of claim 55.
62. **(Currently amended)** ~~[[An]]~~ A recombinant vaccine comprising the nucleic acid ~~molecules~~ molecule of claim 55.
63. **(Currently amended)** The recombinant vaccine of claims 62 wherein said recombinant vaccine ~~[[is]]~~ comprises a recombinant vaccinia vector ~~vaccine~~.
64. **(Previously presented)** The isolated nucleic acid molecule of claim 55 wherein said isolated nucleic acid molecule comprises a nucleic acid sequence that encodes a fusion protein that consists of an IgE signal peptide linked to non-IgE protein sequences wherein the non-IgE protein is an enzyme or functional fragment thereof.
65. **(Previously presented)** An injectable pharmaceutical composition comprising the composition of claim 58.
66. **(Previously presented)** The isolated nucleic acid molecule of claim 1 comprising a nucleic acid sequence that encodes a fusion protein that consists of a non-IgE protein sequences linked to a IgE signal peptide wherein the non-IgE protein is an immunomodulating protein.
67. **(Previously presented)** The isolated nucleic acid molecule of claim 66 wherein said isolated nucleic acid molecule is a plasmid.

68. **(Previously presented)** The nucleic acid molecule of claim 66 incorporated into a viral vector.
69. **(Previously presented)** A composition comprising a nucleic acid molecule of claim 66 and a nucleic acid molecule that comprises a nucleic acid sequence that encodes an immunogen.
70. **(Previously presented)** The composition of claim 69 wherein said composition comprises a nucleic acid molecule that encodes an immunogen, wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.
71. **(Previously presented)** The composition of claim 70 wherein said immunogen is a pathogen antigen is from a pathogen selected from the group consisting of HIV, HSV, HCV, and WNV.
72. **(Previously presented)** An injectable pharmaceutical composition comprising the nucleic acid molecules of claim 66.
73. **(Currently amended)** **[[An]]** A recombinant vaccine comprising the nucleic acid molecules of claim 66.
74. **(Currently amended)** The recombinant vaccine of claims 73 wherein said recombinant vaccine **[[is]]** comprises a recombinant vaccinia vector ~~vaccine~~.
75. **(Previously presented)** The isolated nucleic acid molecule of claim 66 wherein said isolated nucleic acid molecule comprises a nucleic acid sequence that encodes a fusion protein

that consists of an IgE signal peptide linked to non-IgE protein sequences wherein the non-IgE protein is an enzyme or functional fragment thereof.

76. **(Previously presented)** An injectable pharmaceutical composition comprising the composition of claim 69.

77. **(New)** The isolated nucleic acid molecule of claim 1 wherein the immunomodulating protein is selected from the group consisting of wherein the non-IgE protein is an immunomodulating protein selected from the group consisting of an enzyme, functional fragment thereof, IL-15, CD40L, TRAIL; TRAILrecDRC5, TRAIL-R2, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, Ox40 LIGAND, NKG2D, F461811 or MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, CD30, CD153 (CD30L), Fos, cjun, Sp-1, Apl, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, Ikb, NIK, SAP K, SAP1, JNK2, JNK1B2, JNK1B1, JNK2B2, JNK2B1, JNK1A2, JNK2A1, JNK3A1, JNK3A2, NF-kappa-B2, p49 splice form, NF-kappa-B2, p100 splice form, NF-kappa-B2, p105 splice form, NF-kappa-B 50K chain precursor, NFkB p50, human IL-1 a, human IL-2, human IL-4, murine IL-4, human IL-5, human IL-10, human IL-15, human IL-18, human TNF-a, human TNF-P, human interleukin 12, MadCAM-1, NGF IL-7, VEGF, TNF-R, Fas, CD40L, IL-4, CSF, G-CSF, GM-CSF, M-CSF, LFA-3, ICAM-3, ICAM-2, ICAM-1, PECAM, P150.95, Mac-1, LFA-1, CD34, RANTES, IL-8, MIP-1a, E-selectin, CD2, MCP-1, L-selectin, P-selectin, FLT, Apo-1, Fas, TNFR-1, p55, WSL-1, DR3, TRAMP, Apo-3, AIR, LARD, NGRF, DR4 (TRAIL), DR5, KILLER, TRAIL-R2, TRICK2, DR6, ICE, VLA-1, and CD86 (B7. 2).